

LISTING OF CLAIMS

The listing of claims provided below replaces all prior versions, and listings, of claims in the application.

- 5 1. (Currently amended) An electrostatic chuck, comprising:
- a metal base plate;
- a ceramic disc having a predetermined thickness adhesively bonded to said metal
- base plate;
- a planar electrode positioned in the middle of said ceramic disc relative to a
- 10 thickness direction of said ceramic disc; and
- a cooling gas channel formed on a top surface of said ceramic disc over said
- electrode and within an outer peripheral edge of said electrode, the cooling gas channel
- defining an inner boundary of a gas-sealed region at a periphery of the ceramic disc,
- wherein said planar electrode extends beyond said cooling gas channel.
- 15 2. (Cancelled)
3. (Previously presented)An electrostatic chuck according to claim 1,
- wherein said cooling gas channel comprises a ring shape along an outer peripheral edge
- 20 of said ceramic disc, said chuck further comprising gas feed orifices located in a plurality
- of positions at a bottom portion of said gas cooling channel and gas feed orifices located
- in a plurality of positions on a circumference on a surface of said ceramic disc in the
- center side of the chuck.
- 25 4. (Previously presented)An electrostatic chuck according to claim 1,
- wherein said planar electrode includes a first electrode and a second electrode,

said first electrode including,

a disc portion arranged in the center of said ceramic layer, and

a first extending portion extending from a part of the disc portion toward the outer peripheral edge of said ceramic layer,

5 said second electrode including,

a second extending portion arranged opposite to said first extending portion relative to said disc portion of said first electrode, and

a circular ring portion connected to an outer edge of said second extending portion so as to form the outer peripheral edge of said second electrode.

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5. (Previously presented) An electrostatic chuck according to claim 4, wherein said first electrode further includes a plurality of first C-shaped ring portions at predetermined intervals so as to have different diameters, the first C-shaped ring portions extending in C shapes from both sides of said first extending portion around said disc
15 portion.

6. (Previously presented) An electrostatic chuck according to claim 5, wherein said second electrode further includes a plurality of second C-shaped ring portions at predetermined intervals so as to have different diameters, the second C-shaped
20 ring portions extending in C shapes from both sides of said second extending portion and being engaged with said plurality of first C-shaped ring portions of said first electrode.

7. (Currently Amended) A method for manufacturing an electrostatic chuck, comprising:

25 preparing a first disc-shaped ceramic material compact having a half of a thickness of a completed ceramic layer;

forming an electrode on a surface of said first ceramic material compact;

preparing a second disc-shaped ceramic material compact having a half of a thickness of the completed ceramic layer and having a cooling gas channel on its surface in a location overlying said electrode, the cooling gas channel defining an inner boundary of a gas-sealed region at a periphery of the second disc-shaped ceramic material compact;

placing said second ceramic material compact on said first ceramic material compact so as to form a laminate, wherein said planar electrode extends beyond said cooling gas channel in the laminate;

firing the entire laminate to form the completed ceramic layer; and

bonding the completed ceramic layer to a metal base plate by means of an adhesive layer.

8. (Previously presented) The method of claim 7, wherein said adhesive layer is flexible.

9. (New) An electrostatic chuck, comprising:

a disc-shaped ceramic layer having a top surface configured to support a wafer;

a first planar electrode positioned at a center of the ceramic layer relative to a thickness direction of the ceramic layer, the first planar electrode being oriented in a substantially parallel relationship with the top surface of the ceramic layer, the first planar electrode including,

a circular portion disposed in the center of the ceramic layer,

a linear portion extending from the circular portion toward an outer peripheral edge of the ceramic layer,

a plurality of C-shaped portions extending from the linear portion at respectively increasing radial distances from a center of the circular portion, each

of the plurality of C-shaped portions maintaining a uniform distance from the center of the circular portion; and

a second planar electrode defined to be co-planar with the first planar electrode, the second planar electrode including portions defined between the linear portion and the C-shaped portions of the first planar electrode, the second planar electrode including an outer ring portion defined to encompass the linear portion and the C-shaped portions of the first planar electrode,

wherein the first and second planar electrodes do not physically contact each other.

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10. (New) An electrostatic chuck as recited in claim 9, wherein the outer ring portion of the second planar electrode extends radially to within approximately one millimeter of an outer peripheral edge of the disc-shaped ceramic layer.

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11. (New) An electrostatic chuck as recited in claim 9, wherein each of the first and second planar electrodes are defined by tungsten having a thickness within a range extending from about 10 micrometers to about 20 micrometers.

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12. (New) An electrostatic chuck as recited in claim 9, wherein the circular portion of the first planar electrode is defined by a diameter of approximately 30 millimeters, and the plurality of C-shaped portions of the first planar electrode, the linear portion of the first planar electrode, and the portions of the second electrode having an average width of approximately 5 millimeters.

13. (New) An electrostatic chuck as recited in claim 12, wherein a spacing of about one millimeters is maintained between the respective portions of the first and second planar electrodes.

5 14. (New) An electrostatic chuck as recited in claim 9, wherein a total area of the first planar electrode is approximately equal to a total area of the second planar electrode.

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